Pennsylvania Sea Grant, the Pennsylvania Department of Environmental Protection and the Bayfront Center for Maritime Studies have teamed up to provide the opportunity for students to participate in a unique, hands-on educational experience.

Participants will sail aboard the Friendship Sloop *Momentum*, a historic, 42-foot traditionally rigged vessel, and engage in scientific research while learning about the environmental quality and ecology of Presque Isle Bay. Students will be transformed into sailors and scientists for a day as they raise and lower the sails and search for aquatic plants and animals.

Through the *Environmental Rediscoveries* experience, both teachers and students will gain a deeper understanding of environmental issues that affect Presque Isle Bay and Lake Erie environments as well as become active participants in caring for and protecting their environment.

The goals of the *Environmental Rediscoveries* program are to:

- Foster an awareness of environmental issues and concerns affecting the Lake Erie region.
- Create environmental stewards of our fragile environment of Presque Isle Bay.
- Provide students with a unique maritime experience aboard the Friendship Sloop *Momentum*, a 42-foot traditionally rigged wooden sailing vessel.
- Build students’ teamwork skills, self-discipline and self esteem through the cooperative efforts of sailing and sample collection.
This packet of lessons is designed to prepare students for their Environmental Rediscoveries excursion aboard the Friendship Sloop Momentum. The lessons are designed for seventh grade, but can be adapted for most grade levels, with all lessons touching on some aspects of the Pennsylvania Academic Standards. Not all materials included have to be reviewed in their entirety, but it is strongly recommended that the activities and procedures for the field experience be reviewed with the students prior to the field trip.

Most of the lessons have a predominately science theme, but incorporate some aspects of other traditional academic subjects such as language arts, mathematics, and social studies.

Some of the skills students will use in each area include:

**Science process skills:** Students will learn about observation, measurement, classification, inference, prediction, communication, formulation of hypotheses, experimentation, and data interpretation.

**Language Arts:** Students will talk and write about the exciting science activities they are doing, as well as their personal interpretation of their experiences.

**Art:** Students will interpret their findings through illustrations and drawings.

**Mathematics:** Many of the scientific investigations and observations will result in an opportunity for students to apply mathematical skills such as algebra in a variety of ways. Often students will need to apply mathematical operations to solve problems or answer questions.

**Social Studies:** Students will learn about past human activities and about their influences on the present and future.
Primary funding for this manual was provided through grant money from the Pennsylvania Department of Environmental Protection. Additional support was provided by Pennsylvania Sea Grant and the Bayfront Center for Maritime Studies.

For more information about these programs, consult the *Environmental Rediscoveries* website at [http://www.pserie.psu.edu/seagrant/rediscoveries/index.html](http://www.pserie.psu.edu/seagrant/rediscoveries/index.html) or contact staff at the addresses listed below.

**Pennsylvania Department of Environmental Protection**
Office of the Great Lakes
230 Chestnut Street
Meadville PA 16335
(814) 332-6816
[http://www.dep.state.pa.us/](http://www.dep.state.pa.us/)

**Pennsylvania Sea Grant**
Penn State Erie
Station Road
Erie PA 16563
(814) 898-6420
[http://www.pserie.psu.edu/seagrant](http://www.pserie.psu.edu/seagrant)

**Bayfront Center for Maritime Studies**
Foot of Holland Street
Erie PA 16507
(814) 456-4077
[http://www.goerie.com/bcms](http://www.goerie.com/bcms)

**Additional Copies**
Order from the Bayfront Center for Maritime Studies.

**Acknowledgements**
I would like to thank Ray Danielski, Marlene Keene, Dr. Robert Light, Dr. Ed Masteller, Eric Obert, Jim Rutkowski, Ruth Ruud and Jim Stewart who served as content resources throughout the compilation of this manual.